WHAT IS CLAIMED IS:

1. A battery electrode comprising:
an electrode plate, and
a lead bonded to the electrode plate,
wherein an entire surface of the lead opposed to the electrode plate is bonded ultrasonically to the electrode plate.

2. The battery electrode according to claim 1, wherein the electrode plate is a three-dimensional porous metal body, and the lead is bonded to one edge portion of the three-dimensional porous metal body.

3. The battery electrode according to claim 1 or 2, wherein an entire surface of the electrode plate is patterned by applying pressure, to which the lead is bonded.

4. A method for manufacturing a battery electrode comprising:
bonding a lead to an electrode plate,
wherein a three-dimensional porous metal body is used as the electrode plate, and the lead is continuously bonded ultrasonically to the three-dimensional porous metal body, which then is filled with an active material and rolled.

5. The method according to claim 4, wherein excess active material is removed after the filling and rolling processes.

6. The method according to claim 5, wherein the excess active material is removed by spraying air.

7. The method according to claim 5, wherein the excess active material is removed by brushing.

8. The method according to claim 6 or 7, wherein the removed excess active material is collected by suction.

9. An apparatus for manufacturing a battery electrode comprising:
an ultrasonic horn in the form of a disk, capable of rotating around a

central axis and vibrating in a central axis direction, and

an anvil in the form of a disk, arranged opposing the ultrasonic horn on a same plane, and capable of rotating around a central axis,

wherein the ultrasonic horn and the anvil move relative to each other so that the circumferential surfaces of the ultrasonic horn and the anvil can be pressed together to make contact continuously.

10. The apparatus according to claim 9, wherein the anvil has concavities and convexities formed on the circumferential surface thereof.

11. The apparatus according to claim 10, wherein the circumferential surface of the anvil is coated with ceramic or plated with nickel.

12. The apparatus according to claim 10, wherein a surface area of the convexities is 10 % to 50 % of an overall occupied area of the circumferential surface of the anvil.

13. The apparatus according to claim 10, wherein a depth of the concavities is in a range of 20 μm to 100 μm.

14. The apparatus according to claim 9, wherein the ultrasonic horn has a flat circumferential surface.

15. The apparatus according to claim 9, wherein a width of the circumferential surface of the ultrasonic horn is the same as that of the anvil, and both edges of the circumferential surfaces of the ultrasonic horn and the anvil are cut off.